

WHAT IS CLAIMED IS:

- 1        1. An input device for an electronic system, comprising:  
2              a housing;  
3              electronic circuitry for detecting user inputs and transmitting signals  
4 corresponding to said user inputs to said electronic system;  
5              an input element providing a plurality of input signals depending on an  
6 amount of pressure applied to said input, said input element including  
7              a force-sensing resistor, and  
8              a solid elastomeric material over said force-sensing resistor, said  
9 elastomeric material transferring a force from a user's finger to said force sensitive resistor  
10 without visible deformation of said elastomeric material.
  
- 1        2. The input device of claim 1 wherein said input device is a mouse and  
2        said input element is a button for controlling scrolling.
  
- 1        3. The input device of claim 1 wherein said input element is a button for  
2        controlling zooming.
  
- 1        4. The input device of claim 1 wherein said input element is an elongate  
2        strip along which a finger can be moved.
  
- 1        5. The input device of claim 2 wherein a speed of said scrolling is  
2        controlled by an amount of force applied to said force-sensing resistor.
  
- 1        6. The input device of claim 1 wherein said force-sensing resistor  
2        comprises a single foil folded over with an air gap in between.
  
- 1        7. The input device of claim 6 wherein said foil is a plastic film coated  
2        with metal.
  
- 1        8. The input device of claim 7 wherein said plastic film is a polyester.
  
- 1        9. The input device of claim 8 wherein said polyester film is polyethylene  
2        terephthalate.

1           10.     The input device of claim 2 further comprising:  
2                 a module for generating an audible ratchet sound for each predetermined  
3     amount of scrolling.

1           11.     An input device for an electronic system, comprising:  
2                 a housing;  
3                 electronic circuitry for detecting user inputs and transmitting signals  
4     corresponding to said user inputs to said electronic system;  
5                 an input element providing a plurality of input signals depending on an  
6     amount of pressure applied to said input;  
7                 a module for interpreting said plurality of input signals, said module  
8                 providing a single movement of a predetermined amount in response to  
9     an activation of said input element for less than a predetermined amount of time, and  
10                 providing a continuous movement at a speed corresponding to said  
11     amount of pressure for an activation of said input element for more than said predetermined  
12     amount of time.

1           12.     The input device of claim 11 wherein said module is a software driver  
2     in said electronic system.

1           13.     The input device of claim 11 wherein said module includes hardware  
2     circuitry.

1           14.     The input device of claim 11 wherein said input device is a mouse and  
2     said electronic system is a computer.

1           15.     The input device of claim 11 wherein said input element includes a  
2     force-sensing resistor.

1           16.     The input device of claim 11 wherein said single movement of a  
2     predetermined amount comprises a single ratchet of a scrolling movement.

1           17.     A method for operating an input device for an electronic system,  
2     comprising:  
3                 providing a plurality of input signals depending on an amount of pressure  
4     applied to an input element on said input device;

5 providing a single movement of a predetermined amount in response to an  
6 activation of said input element for less than a predetermined amount of time; and  
7 providing a continuous movement at a speed corresponding to said amount of  
8 pressure for an activation of said input element for more than said predetermined amount of  
9 time.

1 18. An input device for an electronic system comprising:  
2 a housing;  
3 electronic circuitry for detecting user inputs and transmitting signals  
4 corresponding to said user inputs to said electronic system;  
5 an input element providing a plurality of input signals depending on an  
6 amount of pressure applied to said input, said input element including a force-sensing resistor  
7 having

8 a base ply,  
9 a resistive resin on said base ply having conductive particulate  
10 interspersed therein,  
11 at least two spaced apart contacts with at least one of the contacts  
12 positioned opposite a surface of the resistive resin for being pressed against the resistive  
13 resin, with the amount of resistance to electricity flowing between the contacts through the  
14 resin varying in accordance with the amount of pressure applied.

15 19. The input device of claim 18 further comprising a raised, solid overlay  
16 above said force-sensing resistor, for allowing tactile location by a user, with pressure applied  
17 to said solid overlay being transmitted to said force-sensing resistor.

18 20. The input device of claim 18 wherein said force sensitive resistor  
19 responds to an actuation force of less than 50 grams.

20 21. An input device for an electronic system, comprising:  
21 a housing;  
22 electronic circuitry for detecting user inputs and transmitting signals  
23 corresponding to said user inputs to said electronic system;  
24 a scrolling element for providing a scrolling input signal; and  
25 a switch button mounted proximate to said scrolling element, said switch  
26 button upon activation providing a signal to activate continuous scrolling.

1               22. The input device of claim 21 wherein said scrolling element comprises  
2 a wheel, and said switch button is mounted adjacent and in line with a rotational direction of  
3 said wheel.

1               23. The input device of claim 22 further comprising a second switch  
2 button mounted on an opposite side of said wheel from said first mentioned switch button,  
3 wherein said first switch button provides a signal for continuous scrolling in a first direction,  
4 and said second switch button provides a signal for continuous scrolling in a second  
5 direction.

1               24. The input device of claim 21 wherein said switch button is mounted  
2 below said wheel and is activated by depressing said wheel.

1               25. The input device of claim 21 wherein said switch button is a pressure  
2 sensitive button, and an amount of pressure applied varies a speed of said continuous  
3 scrolling.

1               26. The input device of claim 25 wherein said pressure sensitive button  
2 includes a pressure sensitive resistor.